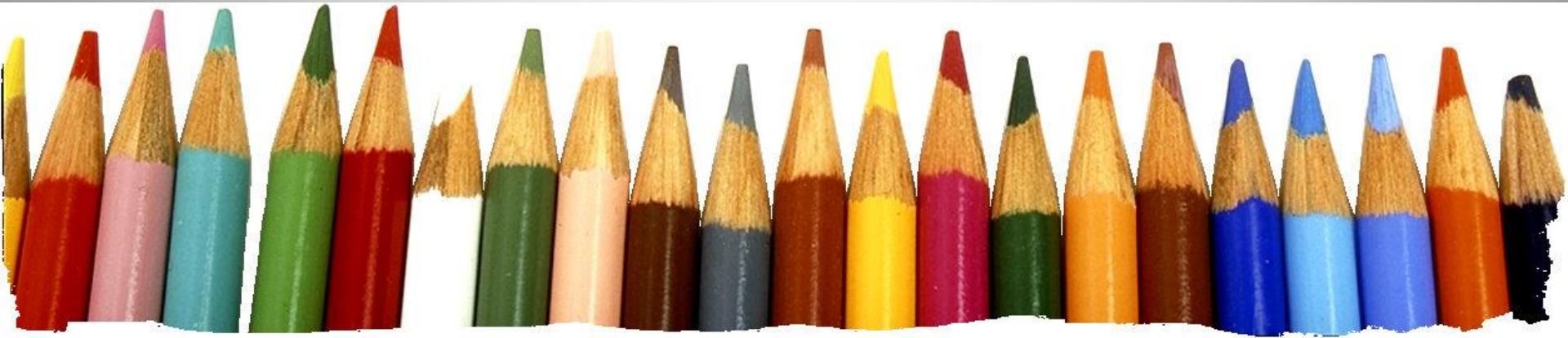


Disease Reporting and Surveillance: The Role of the School Nurse July 18, 2011

Jena Callen
Medical Investigator
Bureau of Epidemiology and Public Health Informatics
Kansas Department of Health and Environment



HEALTHY BEGINNING



“It’s tough to see your child in pain because of getting a shot, but it passes. To see him or her on a respirator, that’s really tough. But to have to plan a funeral for your child, that’s the worst thing in the world.”

– Rodney Throgmorton



Overview

- Background – Reportable Diseases
- Surveillance
- Statutes
- Regulations
- Outbreak control measures
 - Pertussis
 - Measles
 - Mumps
 - Rubella
 - Varicella
- Case Study



Reportable Diseases - History

- In 1878, Congress authorized the U.S. Marine Hospital Service to collect morbidity reports about cholera, smallpox, plague, and yellow fever cases from U.S. consuls overseas



Reportable Diseases – History

- Used for instituting quarantine measures to prevent the introduction and spread of these diseases into the United States.
- In 1879, a specific Congressional appropriation was made for the collection and publication of reports of these notifiable diseases.



Definition of a Reportable Disease



- Reportable diseases are diseases considered to be of great public health importance.
- Local, state, and national agencies require that such diseases be reported



Definition

Reportable Diseases

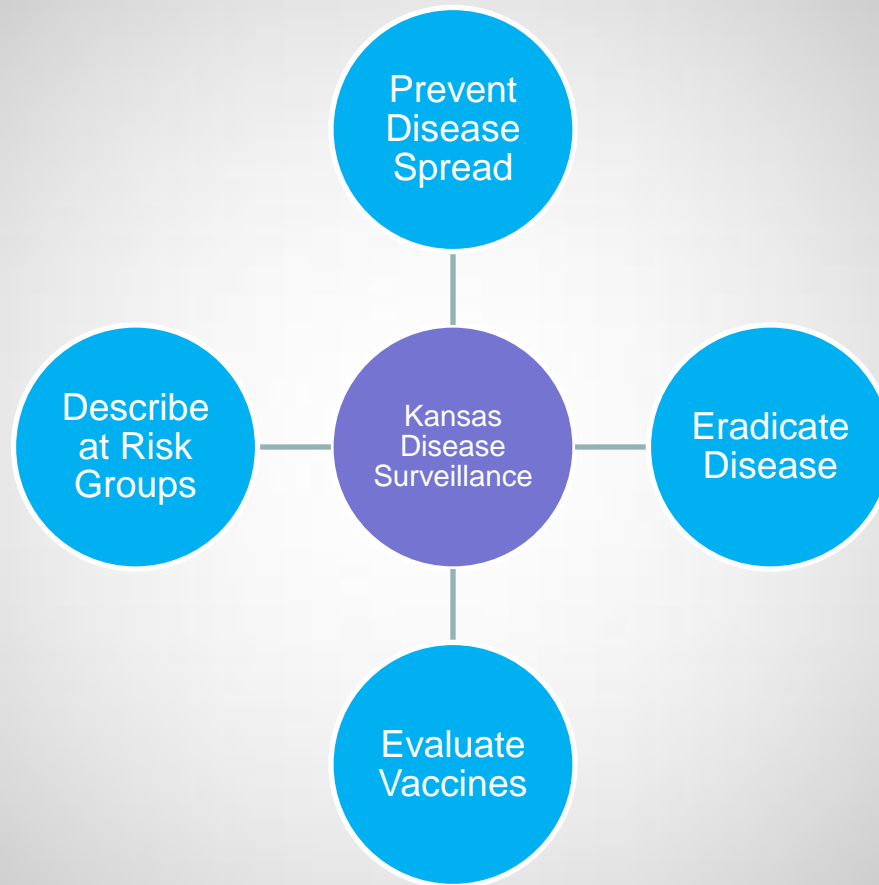
- This permits surveillance (i.e., the collection of statistics on the frequency with which the disease occurs), which in turn allows these agencies to identify trends in disease occurrence, as well as disease outbreaks.
- Outbreaks are reportable regardless of the organism




1-877-427-7317
EPI HOTLINE




Not Just Counting Cases



REPORTABLE DISEASES IN KANSAS for health care providers, hospitals, and laboratories
(K.S.A. 65-118, 65-128, 65-6001 - 65-6007, K.A.R. 28-1-2, 28-1-4, and 28-1-18. Changes effective as of 4/28/2006)

 - Indicates that a telephone report is required by law within four hours of suspect or confirmed cases to KDHE toll-free at 877-427-7317

 - Indicates that an isolates must be sent to: Division of Health and Environmental Laboratories
Forbes Field, Building #740, Topeka, KS 66620-0001
Phone: (785) 296-1633

Acquired Immune Deficiency Syndrome (AIDS)

Amebiasis

Anthrax 

Arboviral disease (including West Nile virus, Western Equine encephalitis (WEE) and St. Louis encephalitis (SLE)) - indicate virus whenever possible

Botulism 

Brucellosis

Campylobacter infections

Chancroid

Chlamydia trachomatis genital infection


Cholera 

Cryptosporidiosis

Cyclospora infection

Diphtheria

Ehrlichiosis

Escherichia coli O157:H7 (and other shiga-toxin producing *E. coli*, also known as STEC) 

Giardiasis

Gonorrhea

Haemophilus influenza, invasive disease

Hantavirus Pulmonary Syndrome

Hemolytic uremic syndrome, postdiarrheal

Hepatitis, viral (acute and chronic)

Hepatitis B during pregnancy

Human Immunodeficiency Virus (HIV) (includes Viral Load Tests)

Influenza deaths in children <18 years of age


Legionellosis

Leprosy (Hansen disease)

Listeriosis

Lyme disease

Malaria

Measles (rubeola) 


Meningitis, bacterial 

Meningococemia  

Mumps 

Pertussis (whooping cough) 

Plague (*Yersinia pestis*) 


Poliomyelitis 


Psittacosis



Q Fever (*Coxiella burnetii*) 

Rabies, human and animal 

Rocky Mountain Spotted Fever


Rubella, including congenital rubella syndrome 

Salmonellosis, including typhoid fever 

Severe Acute Respiratory Syndrome (SARS)  

Shigellosis 

Smallpox 

Streptococcal invasive, drug-resistant disease from Group A *Streptococcus* or *Streptococcus pneumoniae* 

Syphilis, including congenital syphilis

Tetanus

Toxic shock syndrome, streptococcal and staphylococcal

Transmissible Spongiform Encephalopathy (TSE) or prion disease (includes CJD)

Trichinosis

Tuberculosis, active disease  

Tuberculosis, latent infection

Tularemia

Varicella (chickenpox)

Viral hemorrhagic fever 

Yellow fever

KANSAS NOTIFIABLE DISEASE FORM

Today's Date: ____ / ____ / ____

Patient's Name: _____		
_____ Last	_____ First	_____ Middle
Day Phone: _____		Evening Phone: _____
Residential Address: _____		
City: _____	Zip: _____	County: _____
Ethnicity:	Hispanic or Latino	Not Hispanic or Latino
		Unknown
Race: <i>(Circle all that apply)</i>		
American Indian/Alaska Native	Asian	Black or African American
Native Hawaiian or Other Pacific Islander	White	Unknown
Sex: M F	Date of Birth: ____ / ____ / ____	Age if DOB unknown: _____
Disease Name: _____		
Symptoms:	Onset: ____ / ____ / ____	List the 3 most prominent symptoms:
Symptom 1: _____	Symptom 2: _____	Symptom 3: _____
Outbreak associated? Y N	Died? Y N	Hospitalized? Y N
Institutional Residence? None Nursing Home	Correctional	Residential Hospital Psych
Physician Name: _____		Physician Phone: _____
Laboratory Information:		
Specimen Collection Date: ____ / ____ / ____	Date Reported To You: ____ / ____ / ____	
Name of Test Performed: _____	Results of Test: _____	
Name of Laboratory: _____	Laboratory Results Attached? Y N	
Treatment Information:		
Date of Treatment: ____ / ____ / ____	Treatment Type and Dosage: _____	
Treatment Status:	Complete	On-going Discontinued

Name of person reporting: _____ **Phone:** _____

Comments: _____

Mail or fax reports to your local health department and/or to:
 KDHE Office of Surveillance and Epidemiology, 1000 SW Jackson, Suite 210, Topeka, KS 66612-1274
 Fax: 877-427-7318 (toll-free)

(Revised 07/2008)

Kansas Law (Statute) Disease Reporting (Infectious or Contagious Disease)



Kansas Reportable Diseases (Infectious or Contagious) It's the Law

- Statute 65-118
 - Reporting to local authority
 - Persons who have to report
 - Immunity from liability
 - Confidentiality of information



Kansas Reportable Diseases

(Infectious or Contagious)

It's the Law

- Statute 65-128
 - Designate diseases that are infectious or contagious by adoption of rules and regulations
 - Adoption of rules and regulations for the isolation and quarantine of persons afflicted with or exposed to these diseases



Regulations For Reporting Infectious and Contagious Disease



Reportable Diseases in Kansas

It's the Law

- K.A.R. 28-1-2
 - Designates diseases as infectious or contagious and the time frame in which to report
- K.A.R. 28-1-4
 - Directs the hospital administrator to
 - report infectious or contagious disease
 - report results of positive lab tests for the specified infectious or contagious diseases



Reportable Diseases in Kansas it's the Law

- K.A.R. 28-1-18
 - Directs laboratories in Kansas to notify KDHE of positive laboratory results for reportable diseases within 48 hours
 - Diseases highlighted in “red” are to be reported within 4 hours



Kansas Law (Statute) Isolation and Quarantine (Infectious or Contagious Disease)



Kansas Law

Isolation and Quarantine (Infectious or Contagious)

- Statute 65-128
 - Designate diseases that are infectious or contagious
 - Adoption of rules and regulations for the isolation and quarantine of persons afflicted with or exposed to these diseases



Isolation and Quarantine

It's the Law

- K.A.R. 28-1-5
 - Conditions of isolation and quarantine based on current medical knowledge of the infectious disease
- K.A.R. 28-1-6
 - Defines “susceptible person” and lists isolation/quarantine periods for infectious diseases



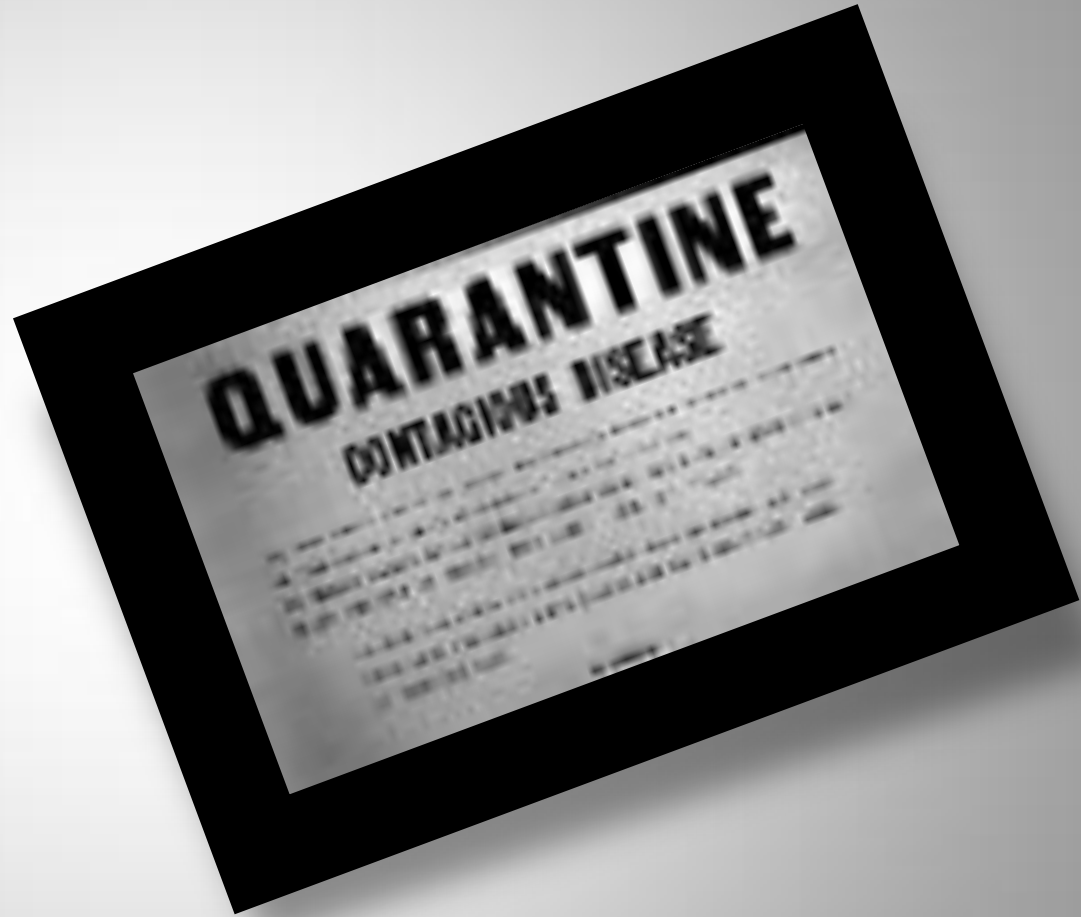
Isolation

- Separation of contagious persons from **susceptible** persons
- Trying to prevent infection & disease in **susceptible** persons
- Time varies by disease



Quarantine

- To remove exposed, **susceptible individuals** from the population
- To prevent spread of disease in the population
- To contain disease



“Susceptible Person”

- No history of disease documented by a licensed physician

OR

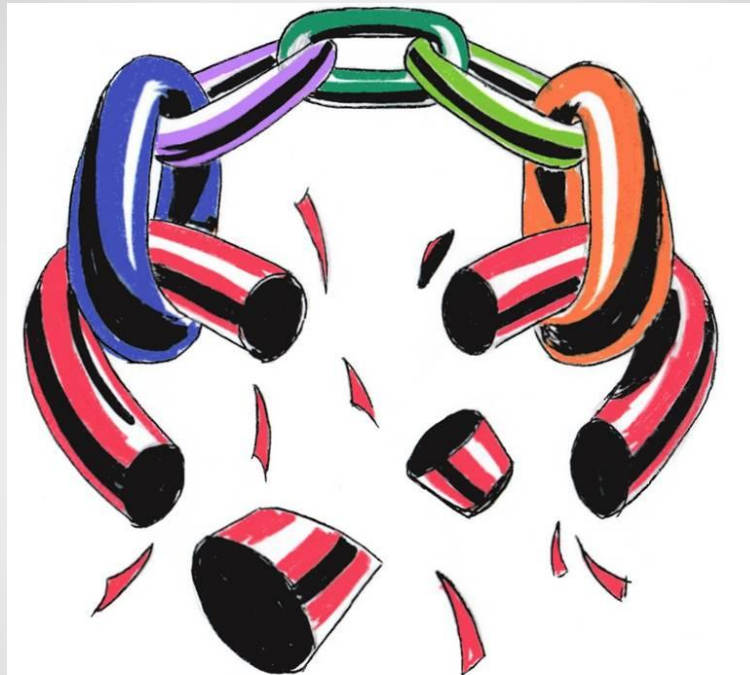
- No laboratory evidence of immunity

OR

- No documentation acceptable to the secretary that demonstrates current immunity against the disease; such as proof of vaccination.



Chain of Transmission



Breaking the Chain of Infection



Isolation and Quarantine It's the Law



Varicella (Chickenpox)



- **Transmission:** droplets, airborne, direct contact
 - spread by coughing & sneezing
 - by direct contact with the lesions
 - contagious 1 – 2 days before rash until lesions are crusted
 - short survival time in the environment
- **Highly infectious – 90% of susceptible contacts infected**
- **Signs/Symptoms:** pruritic skin rash
 - Usually on face, scalp, or trunk occurring in crops beginning with maculopapular lesions evolving into vesicles



Complications of Varicella

- Bacterial infection of skin lesions
- Pneumonia (viral or bacterial)
- CNS manifestations
- Congenital Varicella Syndrome



Congenital Varicella Syndrome

- Results from maternal infection during pregnancy
- Period of risk through first 20 weeks of pregnancy
- Characteristics:
 - Atrophy of extremities with skin scarring
 - Low birth weight
 - Neurological abnormalities
- Risk appears to be small ($\leq 2\%$)



Effects of Congenital Varicella



The skin scars are depressed, pigmented and often have a zigzag configuration

Neurological, ophthalmologic, skeletal, gastrointestinal abnormalities are also present



Varicella Reporting Form

VARICELLA (Chickenpox) Reporting Form Kansas Department of Health and Environment

Patient Information	Today's Date: ____ / ____ / ____			Is this case outbreak-related? (circle one)			Y	N	Unknown	
	Patient's Name: _____									
	Last			First			Middle			
	Day Phone: _____				Evening Phone: _____					
	Residential Address: _____									
	City: _____			Zip: _____			County: _____			
	Ethnicity: (circle one)			Hispanic or Latino			Not Hispanic or Latino			Unknown
	Race: (circle all that apply)			American Indian/Alaska Native			Asian			Black/African American
			Native Hawaiian/Other Pacific Islander			White			Unknown	
Sex: M F			Date of Birth: ____ / ____ / ____			Age if DOB unknown: _____				



Varicella Reporting Form

Clinical Information

Date of Rash Onset: ____ / ____ / ____ OR 1st date child absent due to chickenpox: ____ / ____ / ____

Severity of Varicella: ☐ Mild (<50 lesions) ☐ Moderate (50-500 lesions) ☐ Severe (>500 lesions)

Hospitalized? (circle one) Y N Unknown Died? (circle one) Y N Unknown

Diagnosed by: (circle one) Parent Physician/Nurse School Self Other _____

Received previous varicella vaccine? (circle one) Y N Unknown

If yes, dates: Varicella (VZV) dose 1 ____ / ____ / ____ Varicella (VZV) dose 2 ____ / ____ / ____



Varicella Reporting Form

Laboratory	Specimen Collection Date: ____ / ____ / ____	Specimen Source: _____
	Type of Test Performed: _____	Results of Test: _____
	Name of Laboratory: _____	Laboratory Results Attached? Y N

Name of person reporting: _____ Phone: _____

Agency/Organization Name: _____

Type: (circle one) School Pre-school/Childcare Physician Health Department Laboratory

Comments: _____

Mail or Fax reports to your local health department or to:
BEDP – Disease Surveillance, 1000 SW Jackson, Suite 210, Topeka, KS 66612-1274
FAX Toll-free to: 1-877-427-7318

For additional Varicella Reporting forms and information: <http://www.kdhe.state.ks.us/chickenpox/index.html>

Kansas Varicella Reporting Form v1.0 revised 6/2004



Varicella Breakthrough Disease

- Vaccinated persons developing varicella more than 42 days after vaccination
- Milder than in unvaccinated persons
- Fewer than 50 skin lesions
- Shorter duration
- Rash atypical – maculopapular with few or no vesicles



Breakthrough Varicella Rash

Determine Case Severity



Measles (Rubeola)



- Transmission: droplets and airborne
 - Spread by coughing and sneezing
 - Contagious 4 days before until 4 days after rash
 - Survives on surfaces up to 2 hours
- 90% of susceptible contacts infected
- 20% have complications
- Signs/symptoms
 - Fever, cough, conjunctivitis, coryza
 - Maculopapular rash
 - Begins on face, spreads to body in 2-4 days



Complications of Measles

- Pneumonia
- Encephalitis
- Bronchitis
- Croup
- Ear infection
- Diarrhea



Rubella

German Measles

(3 Day Measles)

- **Transmission:** droplets and airborne
 - Spread by coughing & sneezing
- **Signs/symptoms:**
 - Maculopapular Rash
 - Appears on face, spreads to body
 - Fever
 - Arthralgia or arthritis,
 - Lymphadenopathy or conjunctivitis.



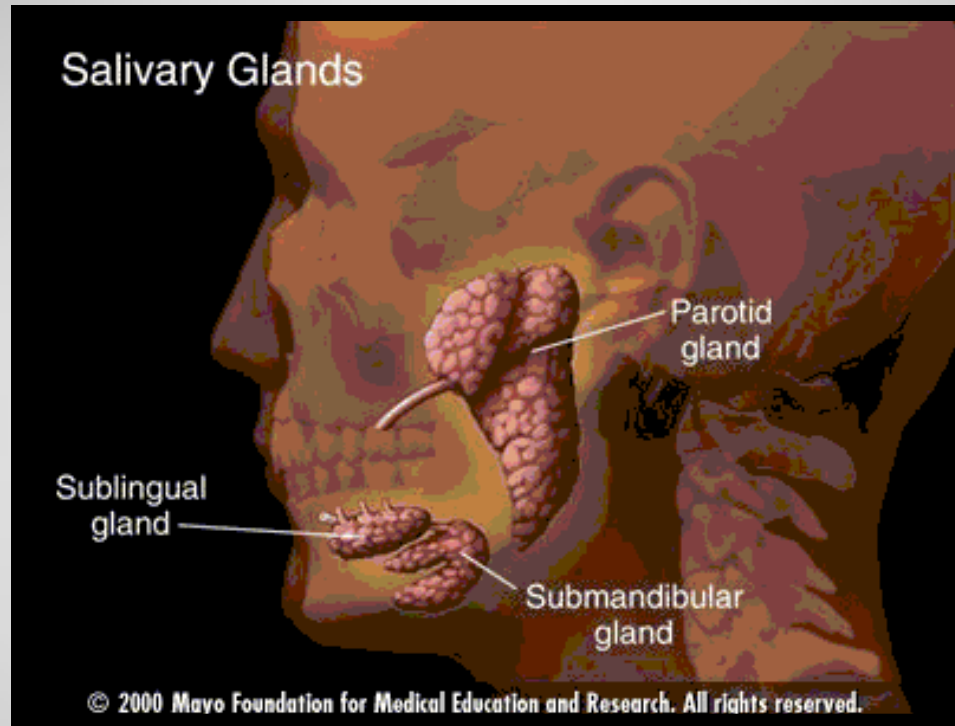
Complications

Congenital Rubella Syndrome

- Cataract
- Glaucoma
- Hearing Loss
- Heart Defects
- Neurological



Mumps



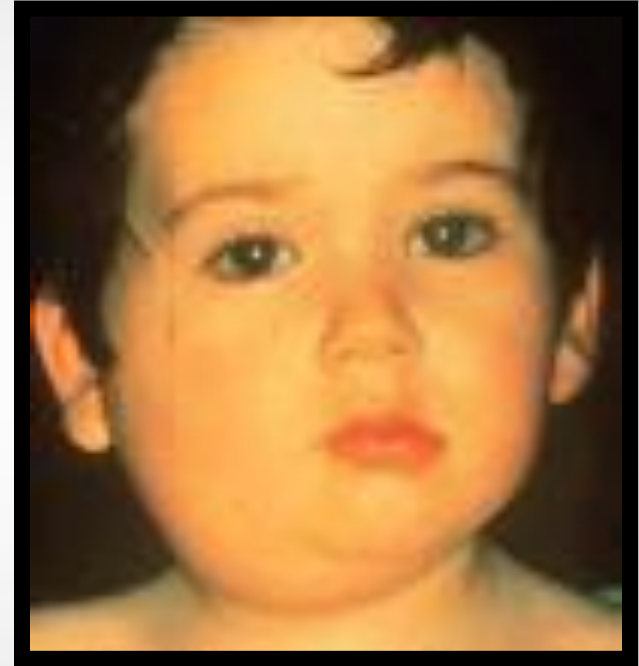
Mumps

- **Transmission:**
 - direct contact with respiratory secretions or saliva
- **Signs/Symptoms: Non-specific**
 - Fever
 - Headache
 - Muscle aches
 - Tiredness
 - Loss of appetite
 - Swelling of salivary glands



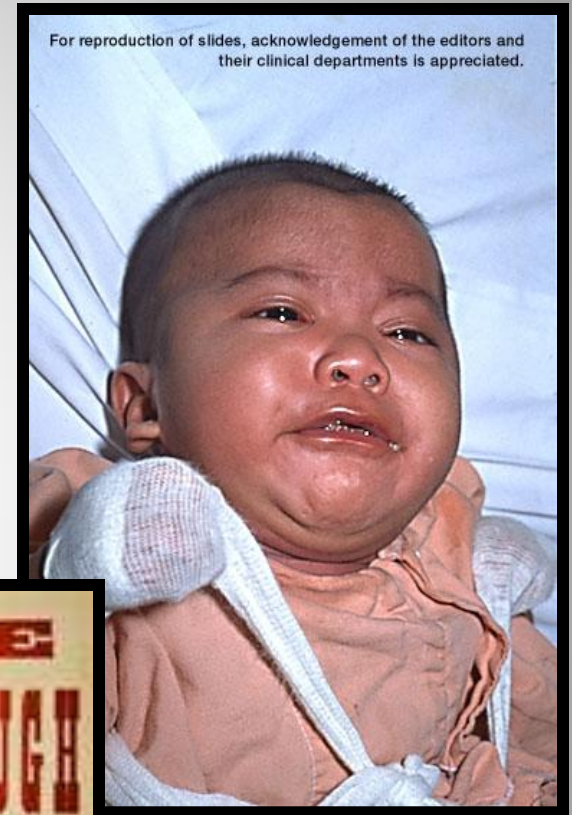
Complications of Mumps

- Inflammation of brain, tissue covering brain & spinal cord
- Inflammation of testicles
- Inflammation of ovaries and/or breasts
- Spontaneous abortion
- Deafness



Pertussis (Whooping Cough)

- **Transmission:**
 - direct contact with discharges from respiratory mucous membranes of infected persons
- **Signs/Symptoms:**
 - Paroxysmal spasms of severe coughing
 - Whooping
 - Post-tussive vomiting



Complications Of Pertussis

- Pneumonia
- Encephalopathy
- Death
- Pulmonary complications
- Pressure-related complications



Video of Pertussis



MRSA

(Methicillin Resistant Staph Aureus)

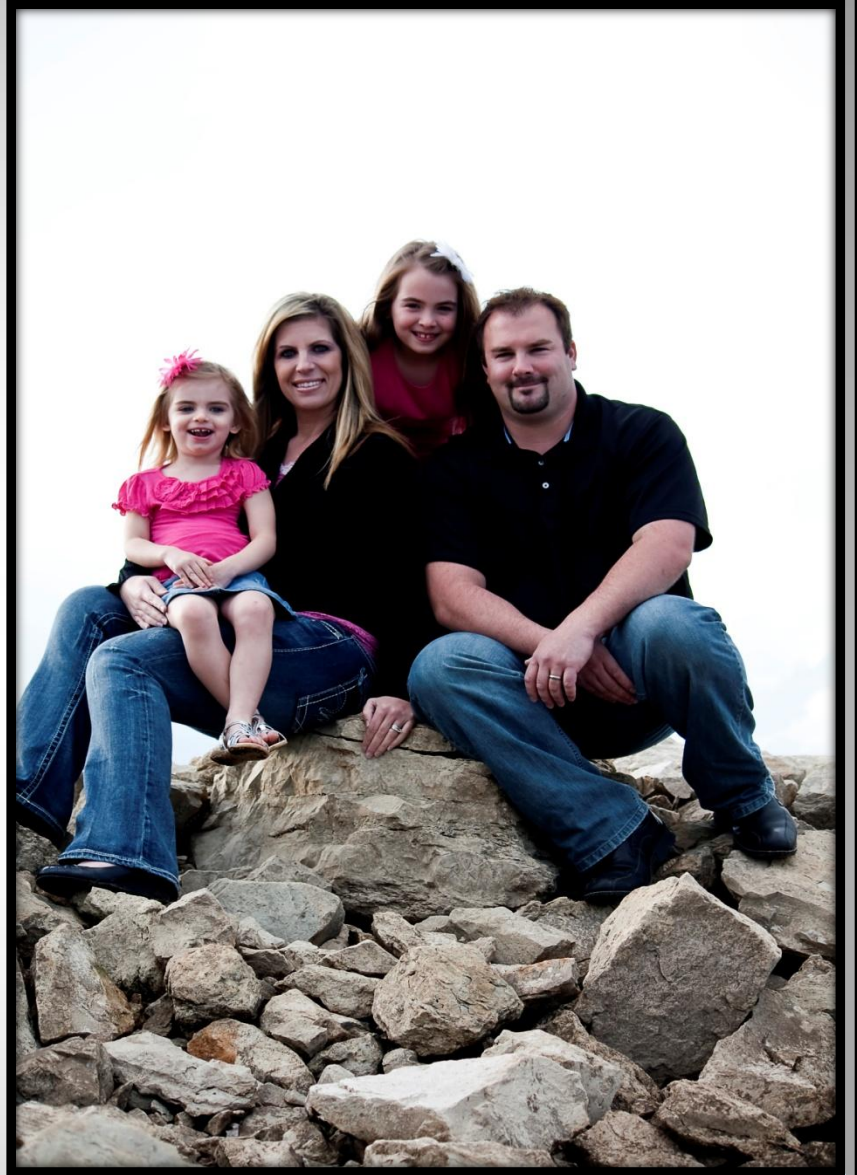
- Individual cases of MRSA not reportable
- Outbreaks are reportable
 - 3 or more cases epidemiologically linked
 - <http://www.cdc.gov/features/mrsainschools>
 - <http://epa.gov/oppad001/chemregindex.htm>



REMEMBER....

- CONTACT YOUR LOCAL HEALTH DEPARTMENT
- DO NOT TRY TO DO THIS ON YOUR OWN

AND
REMEMBER “WHY” WE
DO WHAT WE DO.....



Resources

- Centers of Disease Control
www.cdc.gov/nip
- Kansas Immunization Program
www.kdhe.state.ks.us/immunize
- Immunization Action Coalition
www.immunize.org
- Epidemiology and Prevention of Vaccine-Preventable Diseases, 11th Edition, May 2009
- Red Book Online www.aapredbookorg



Resources

- Kansas Classroom Handbook of Communicable Diseases, Sept. 2004
- Bureau of Surveillance & Epidemiology

www.kdheks.gov/epi

OR

- Bureau of Disease Control & Prevention

www.kdheks.gov/immunize



Resources

- 2007 Reportable Disease List
www.kdheks.gov/epi/kids_reporting_tools
- Kansas Notifiable Disease Form
www.kdheks.gov/epi/download/KANSAS_NOTIFIABLE_DISEASE_FORM.pdf
- Kansas Administrative Regulation 28-1-2, Designation of infectious or contagious
www.kdheks.gov/epi/download/28-1-2.pdf



Resources

- Kansas Public Health Statute 62-118
Reporting to local health authority as to
infectious or contagious diseases

www.kslegislature.org/legsrv-statutes/getStatuteInfo.do

- Morbidity and Mortality Weekly Report,
HIPAA Privacy Rule and Public Health:

www.cdc.gov/mmwr/pdf/other/m2e411.pdf

- Forum Guide to The Privacy of Student
Information

<http://nces.ed.gov/pubs2006/2006805.pdf>



LET'S REVIEW....



Contact Information

Jena Callen
Medical Investigator
785-296-5588

jcallen@kdheks.gov

OR

Epi Hotline
877-427-7317

EPIhotline@kdheks.gov



QUESTIONS???



<http://www.kdheks.gov/>

